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ABSTRACT

The West Virginia Department of Education created and implemented a computer-assisted summer remediation program for Job Training Partnership Act-eligible students who were academically deficient. The curriculum had four components: mathematics computation, reading comprehension, personal guidance, and career exploration. Sites in 12 county school systems were set up the first year. Students selected were 14- and 15-year-olds who were below grade level in mathematics and reading and recommended by their teachers. The program was designed to allow students to receive instruction in the morning and to work in the afternoon, 4 days a week, for 6 weeks. Students received minimum wage for both the work and the education components of the program. Classroom and computer laboratory time was scheduled. Teachers and student aides were carefully selected, and inservice training for teachers was provided. The curriculum was developed by teams of innovative classroom teachers and guidance supervisors from the West Virginia Department of Education. Students were pretested and posttested using the Stanford Diagnostic Reading and Mathematics Tests. Overall gains for the program were a 1.3 grade increase in reading and 1.2 grade increase in mathematics the first year, with similar gains the following 2 years of the program. An evaluation concluded that the program reduced the dropout rate, had a positive effect on grade point average, reduced absenteeism, improved motivation, and increased enrollments in vocational education. The Department of Education plans to continue and expand the program. (KC)

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WEST VIRGINIA DEPARTMENT OF EDUCATION
GOVERNOR'S SUMMER YOUTH ENHANCEMENT PROGRAM

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INTRODUCTION

We would like to thank you for attending this session brought to you by the West Virginia Department of Education. We have prepared a video presentation which will describe the Governor's Summer Youth Enhancement Program.

Before I begin to describe our implementation efforts, a little background information on our state may be helpful. West Virginia is located in the mid-Atlantic region of the United States.

West Virginia is mostly a rural, mountainous state, with the Appalachian mountains running the length of the state. Our economy is dependent on tourism, chemical, coal, and steel related industries.

Until recently, the Job Training Partnership Act (JTPA) Title II-B monies were used only to employ economically disadvantaged students during the summer. In October, 1986, however, the Act was amended to mandate that some of the Title II-B monies in each state be used for remediation of the basic skills. The amendment to Title II-B places new emphasis on literacy, and includes the following goals:

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1. to enhance the basic educational skills of youth
2. to encourage school completion or enrollment in supplementary or alternative school programs
3. to provide eligible youth with exposure to the world of work

The act also requires that a system be developed to evaluate the effectiveness of the remediation program. Such goals and objectives may include:

1. improvement in school retention, and number of students graduating
2. improvement in academic performance, including mathematics and reading comprehension
3. improvement in employability skills

The amendments were a result of studies which have shown that disadvantaged students tend to lose ground over the summer months, while other students tend to have better retention of academic skills.

As a result of the new amendments to JTPA, the West Virginia Department of Education, Bureau of Vocational, Technical and Adult Education, wanted to play a major role in the development and implementation of a summer remediation program for JTPA eligible students that were academically deficient.

A committee was organized composed of representatives from the Employment & Training Division of the Governor's office, the West Virginia Private Industry Council, Employment Security, and curriculum experts in reading, math, prevocational education and guidance, along with the JTPA staff from the Department of Education. This committee was to determine the best approach and delivery system for high risk students. All agreed that the program had to be of high interest to the students. There had to be a drawing card, something that would make the students want to attend school in the summer.

The committee concluded that computer assisted instruction would be the best vehicle, because of the non-threatening, highly motivational, self-paced environment that computers create. We also wanted applied math and reading tasks with hands-on activities. It was also important that the child be encouraged to complete school. THE COMMITTEE DID NOT WANT TO JUST REMEDIATE, IT WANTED TO SERVE THE WHOLE CHILD.

Research has shown that remediation alone is not enough, that if significant gains are to be made with children that one has to change the child's attitude about him/herself and about school. Therefore, the committee decided that the curriculum would be composed of four components, those being math computation, reading comprehension, personal guidance, and career exploration.

SITE SELECTION

The first two years only twelve sites were funded. This was

based on the amount of money the Private Industry Council was able to allocate. The next task was determining where the twelve sites would be located. To make a long story short, the twelve county school systems' eligibility was based on those having the highest combined average of unemployment and dropout rates.

Due to the success of the program the first two years the Private Industry Council funded forty seven county school systems the third year.

STUDENT SELECTION

Five factors were used to determine which students would be selected for participation in the program. They were:

1. years below grade level on the Comprehensive Test of Basic Skills (CTBS) in math and reading
2. those students receiving below average grades (C) in reading/language arts and math, over the preceding two years
3. those students whom the teachers and counselors believed to be the most receptive to remediation
4. those students who had participated in a remediation program in prior year(s) and were still in need of remediation
5. those students who were 14 and 15 years old

After the students were identified by the school systems, Employment Security took applications to determine which students were JTPA

eligible.

PROGRAM STRUCTURE

The program was designed to allow the students to receive instruction during the morning and to work in the afternoon. The students participated four days a week, Monday through Thursday, for six weeks. Each student received minimum wage for both the work and education component of the program.

The reading and math remediation components consisted of four 1-hour blocks of time each week. Two blocks were computer assisted instruction and the remaining two blocks were applied activities. The combination of computer assisted instruction and applied classroom activities constituted twenty-four hours of instruction in six weeks.

The guidance and career exploration components were each taught two hours a day, twice a week, totaling the same number of contact hours as the basic skills components. In both cases curriculum was developed to meet the projected individual needs of the students.

COMPUTER LAB

Another aspect of the program was the computer lab. Each lab consisted of: 15 model 30 IBM PS/2's, with color displays, the Novell network, the I/Class administration system, and a IBM PS/2, with 1MB of internal memory, and a 70MB fixed disk.

With the Novell and I/Class systems, teachers are able to monitor students' progress at any time. They have virtually complete control over the lab. At the end of the day, teachers are able to call-up a student's record to check his/her progress. Additionally, the students can print out the work they have completed for the day.

A real strength of the Novell and I/Class systems is the capability to manage record keeping. The system includes a password for each student. The password insures teacher control of student access.

PRE-TEST AND POST-TEST/CORRELATION OF SOFTWARE

As I stated before, JTPA required that a system be put in place to evaluate the effectiveness of the program. Beyond this we also wanted the system to be diagnostic in nature, determining the math and reading skills of each student. Because of the limited instructional time it was decided to concentrate on math computation skills and reading comprehension skills.

The Stanford Diagnostic Reading and Mathematics Tests were used for the Pre-test. The same level was used for the post-test, but a different form. (3rd Edition, Brown Level, Form G and H)

In order to insure placement of students, the IBM Basic Skills Series was correlated to the Stanford Diagnostic Math and Reading Tests. The classroom activities were also correlated to the software so the students would be receiving instruction via computer

for one hour and applying those same skills the next hour.

TEACHER SELECTION

As most of you know, the real success of any educational program depends on the quality of instruction, and the teacher's attitude toward the subject matter and the students. The county boards of education were requested to hire a certified teacher in math, reading, and guidance. Adult Basic Education teachers could be used for the reading and math components if certified math and reading teachers did not apply. It was requested that the career exploration teacher be chosen from industrial arts, home economics, or vocationally certified teachers. We found that elementry teachers could teach the math and reading componets if they felt comfortable with older students. One county had a business education teacher teaching the career exploration component. She felt uncomfortable with some of the activities but due to the hands on approach at the teacher workshop and the detailed teacher information sheets, in the curriculum, she did an excellent job teaching. In fact, she has taught the career exploration component all three years.

Of equal importance, was the willingness of the teacher to work with the at-risk and economically disadvantaged students who were sometimes labeled "trouble makers" and "slow learners". Overall, the counties did an excellent job in hiring teachers. Many teachers that participated the first year chose to continue the second year.

Teachers were hired to work four hours a day, two days a week, to deliver classroom instruction. They were employed to work 40 additional hours to allow for preparation time at the beginning of the program and wrap up time at the end.

Student aides were also utilized during the program. They were JTPA eligible students that were high academic achievers. They assisted the teachers with the participants in the program, both in the computer lab and in the classroom.

After the first year of operation, teachers suggested during a follow up meeting that there was a definite need for a lead teacher at each site. This teacher would be in charge of all the paperwork, insure coordination between the components, make sure the computer lab was in working order, and that necessary materials were available. This was implemented after the first year, and proved to be quite successful. The lead teacher worked every day instead of every other day.

CURRICULUM DEVELOPMENT TEAMS

Curriculum Development Teams consisted of classroom teachers known to be innovative in their fields and math, reading, career exploration, and guidance supervisors from the WV Department of Education. The foundation of the curriculum was built on a set of guidelines which all four areas were to follow. It was decided that the curriculum developed had to:

1. be of high interest to disadvantaged students that historically did not do well in school
2. be activity based
3. reinforce math computation and reading comprehension whenever possible in the guidance and career exploration activities
4. include pre-employment skills lessons in each component
5. have activities that students of all levels could perform and achieve with some degree of success
6. be a blend of group and individual activities

The curriculum had to support the learning outcomes that had been approved by the WV Board of Education. Therefore, our curriculum and the software were directly correlated to these learning outcomes. This correlation also allowed teachers to cross reference the summer program materials with curriculum used during the regular school year.

With the limited period of class hours, it was critical that instruction be productive. Therefore, the curriculum and the software activities were also correlated to insure quality time on task. For example, an exercise on "Following and Giving Directions" using a street map was developed to reinforce a computer reading activity in which maps were also used.

The layout and design of the activities were carefully considered. The teacher would have little preparation time available during the program. It was decided that to make this a

successful program, the curriculum had to be a complete package, including:

1. the objective of the lesson
2. a materials list
3. lesson preparation tips for the teacher
4. detailed lesson plan for the activity
5. extension activities where applicable
6. Teacher Information Sheets
7. Student Information Sheets
8. Student Activity Sheets and Teacher Answer Keys

Student Activity Manuals were supplied to each site so that teachers did not have to spend time duplicating materials. The manual also provided the student with take-home materials for future reference.

READING

Due to the limited time frame of the program, the focus of the reading component was narrowed to comprehension skills and strategies. Activities were geared toward real-life application of skills and concepts in order to promote and maintain a high level of interest.

The objectives of the reading component were:

1. Following directions and locating and interpreting information. The rationale for selecting these activities stem from the need for vocational students to be able to

effectively use manuals, forms, and other graphic representations of information.

Activities included reading charts and graphs, reading and interpreting maps, and interpreting data given on forms.

2. The second objective was teaching concepts of main ideas and supporting details. These concepts are fundamental to understanding all types of written discourse and in organizing one's writing.
3. Vocabulary study of general usage and occupational specific words. Students were taught methods to process word meanings and were given occupationally specific vocabulary through the use of games.
4. Applied communicaton through newspaper use. Understanding and making effective use of the newspaper as a daily source of information enables students to interpret it as a tool for learning and for use in real-life situations. A culminating activity in this section required students to study classified ads for employment information, and to analyze and graph the job market in a given location. Students could also use this information to make some tentative career decisions.

CAREER EXPLORATION

The career exploration component was designed to introduce students to a variety of occupations in the industrial, enviroment, business, and service clusters. Attention was focused on giving students insight into what is expected of employees as they prepare to enter the labor market. They needed to be made aware of the

tremendous importance of the mastery of basic educational skills such as reading, writing, and mathematics and how they relate to occupational choices.

The major objectives of the career exploration component were:

1. to explore a variety of occupations through simulated hands-on activities, students explored careers ranging from automotive mechanics and construction workers to nursing and catering.
2. to introduce pre-employment skills necessary for successful employment, students engaged in simulated interviews, learned how to fill out job applications, and spent time learning how to successfully locate jobs.
3. to develop good work habits, students were continually instructed on proper safety habits, and through group work learned to work cooperatively with others.
4. to develop an appreciation and respect for the dignity of work, no matter if the job was a skilled position or a necessary service occupation.
5. to reinforce math and reading skills as they relate to various occupations, students repeatedly used measurement and math skills in their activities. Each lesson encouraged students to read, whether it be following directions or studing career profiles.

MATHEMATICS COMPUTATION

In the math program, as with the reading program, the time

constraint was a real factor that had to be considered. The time factor and the necessity for a solid foundation in basic skills were primary reasons for concentrating on computation in math.

The goals of the math component were:

1. to teach students to apply theory to a variety of relevant situations
2. to have students involved in activities which were meaningful to real life situations
3. to reinforce reading and career exploration concepts in the math activities
4. to practice estimation and mental calcuation
5. to use the calculator as a tool for problem solving and for learning order of operation skills

GUIDANCE

The guidance component was specifically concerned with the development of the students' personal, social, educational, and career aptitudes and goals through direct interaction. The basic philosophy was to help learners to become independent, fully functioning, contributing members of the community and society.

The major goals of the program were to assist students in the development of:

1. self-understanding and a positive self-concept. It is important at this age for students to understand and cope with their emotions. Without a positive self-image, academic success is not as likely.

2. effective interpersonal relationships. There were many activities where students had to work as a group, as in real life.
3. skills needed for effective decision-making. Both individual and group decisions were made. Computer activities led students through the process of making tentative career decisions.
4. to assist students in the development of an awareness of their environment as it relates to career, academic, personal, and social development.

Each guidance session began with an energizer and concluded with a social activity which was planned by students. All students were given the opportunity to plan a social activity.

TEACHER IN-SERVICE

For teachers to be able to deliver a program such as this, it was necessary to provide in-depth training for them. Many were unfamiliar with computers, and uncomfortable with teaching hands-on activities. Cedar Lakes Conference Center, funded by the BVTAE, provided the perfect surroundings for an intense week long in-service for teachers. The hills and peaceful lakes provided the perfect atmosphere for working and to relax after long hours in the classroom.

Our work began two days before teachers arrived, when a truck pulled up and delivered what seemed liked 1,000's of boxes and crates of computers. Our area lab technician, along with the local IBM staff, began the task of unloading and setting up 30 computers

and two Novell networks. There were times during that day that none of us were sure we were going to make it ! After the two labs were up and running, we set about the task of loading the entire set of software onto 12 Novelle systems, which were then distributed to each of the county sites.

The teachers arrived, and we began with a general session to explain the summer program and the administrative duties they would each need to fulfill. Instructions were given on how to fill out forms and other necessary "red tape."

Once that was accomplished, the teachers broke up into four groups and began their week of intense learning. Two groups went to the labs, where personnel from IBM trained them to use DOS, the Novell network, and the courseware. Teachers spent many hours actually working through individual lessons to become completely familiar with the management aspects and educational aspects of the courseware. The other two groups retired to the classrooms, where they spent time reviewing the curriculum and specific activities. Supervisors from the DOE served as instructors for these classes, and made sure that every teacher understood the concepts to be taught and the actual activities to be conducted. Teachers were seen all week engaged in activities from constructing projects to role playing. This technique allowed them to be actively involved in the instruction and to share tips and ideas on how to best deliver the activity.

Although we were sometimes accused of being drill sergeants, we did provide some time off during the week. One evening we sponsored a picnic and swim party for relaxation. Our "students" were so intent on learning that we found some of them in the labs until midnight, and always there was a sharing of information. Many of our students quickly became "teachers" and everywhere small group instruction broke out.

By the end of the week teachers had done every activity, asked every question they could think of and logged hours on the computer. But they were returning to their counties ready and prepared for the summer. Everyone truly enjoyed the week!

RESULTS

The results of the pre-tests and the post-tests were sent to the research unit of Marshall University for analysis. The t-test was done on the raw score mean difference to determine the level of of significance. The variation in the raw scores and the number of students are the key factors in determining if the gain was significant. Gains were not significant in some individual counties, but they were significant when the t-test was done on all the students that participated in the program statewide. Although some gains were not statistically significant, taking into consideration the short duration of the program, they were very positive and encouraging.

The gain for the reading comprehension was a 1.3 grade increase the first year, a 1.4 grade increase the second year, and a .64

grade increase the third year. The gains for the math computation was a 1.2 grade increase the first year, a 1.6 grade increase the second year, and a .93 grade increase the third year. If you take into consideration, that studies have shown that most low achievers lose one-half to three-fourths a grade level during the summer, then the gains are even more significant. Taking this normal loss into consideration, it becomes readily apparent that the average real gain is close to 2 grade levels instead of 1.2 grade levels. The students are returning to school with a much greater chance for success than ever before.

LONGITUDINAL FOLLOW-UP FOR 1987 AND 1988

A survey was conducted in the spring of 1989 of the original 12 sites operating the JTPA Summer Youth Programs in 1987 and 1988.

The results of the survey indicate that the JTPA Governor's Summer Youth Enhancement Program reduces the dropout rate, has a positive effect on grade point average on the majority of the students, reduces absences from school, improves motivation and attitude toward learning and school, and increases the enrollments in vocational education.

The graduation and dropout rates showes that of the 310 participants in 1987 sixty-three graduated, one hundred eighty-four were still in school and sixty-three or 20% had dropped out. This was only 2% above the the state average of 17.4%. Realizing that

all of these students were at risk of dropping out we feel that an 80% retention rate exemplifies this program's effectiveness. As of January 1989,four of the 1988 summer group had graduated, three hundred four were still in school and thirteen or 3.9% had dropped out. As you can see the dropout rate improved dramatically in the second year.

In both years, more students had a gain in grade point average than had a decrease.

The average number of absences per student decreased each year. The 1987 group had an average of 10.8 absences in 1986, 9.3 in 1987, and 7.3 in 1988. The 1988 group had an average of 9.4 absences in 1987 and 7.5 in 1988. The first year shown on the chart depicts the students absenteeism prior to their participation in the program

In the area of motivation and attitude, teachers' ratings showed that one hundred forty-one students improved, ninety-nine stayed the same and only seventeen got worse in the 1987 group. The 1988 group was similar with one hundred forty-six improved, ninety-nine the same, and with only nine regressing.

Forty percent of the participants were enrolled in vocational education programs prior to participating and 60% were enrolled in vocational education programs after participation.

SUMMARY

The West Viriginia Department of Education and the Private Industry Council have been very pleased with the results of the program. The Department of Education plans to continue the program and would like to expand the program to every county in the state.

Thank you for your attendance at today's session.

We will be happy to answer any questions about the program.

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